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☞ *See Advertisement on last page.*

Nature's Image of Washington.

BY MARSHALL S. PIKE, OF THE HARMONEONS

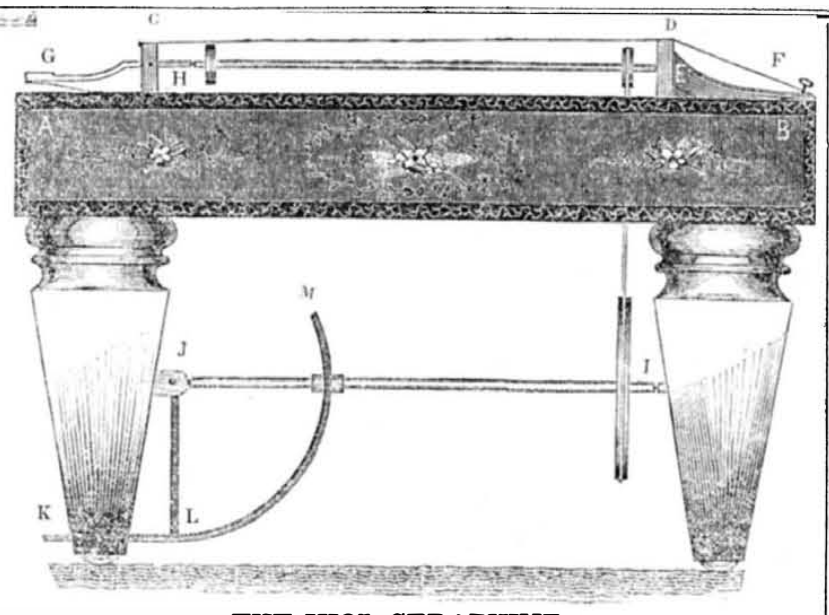
DESCRIPTIVE: Opposite Harper's Ferry,—which is situated on a pleasant elevation at the junction of the Potomac and Shenandoah rivers—a few rods north of "Pinnacle Bluff," a flighty eminence on the Blue Ridge Mountains, stands a most singular formation of rock, known as 'Washington's Face'; and which, to a casualist void of imaginative powers, is easily recognized if pointed out by a guide; but to a close observer, however, with common discernable perception, it presents *at first sight* a most striking and correct resemblance of *the great original*. From midway the bridge which crosses the Potomac, the countenance and contour of the face *to me*, appeared discriminatingly perfect, and constrained me to look upon it as *one* of the most wonderful, and the noblest work of revealed nature.

In the high barren cliffs of the Blue Mountain Ridge,
That frightfully hang o'er the trestle-built bridge,
Juts out into space a huge rocky bluff,
Which the elements rudely left broken and rough.
Near this, stands a bust so exquisitely fair,
That the chisel of art would be uselessness there!
For nature wrought well till the model was done—
An impress on stone of our GREAT WASHINGTON.

The Earth born from chaos at some mighty shock,
Left the image to rest on the high mountain rock,
On a turret-like peak, in the heavens above,
As a sentinel over the country we love:
Where the sunbeam could linger till daylight had fled,
Where the bright stars of night, form a crown o'er its head;
And where, through the greenwood, the faintest breeze creeps,
To sigh for the Hero, who deathlessly sleeps.

There it stands like a giant in storm and in calm,
Like the Hero in battle, no foeman could harm!
And commandingly looks with a Patriot's pride,
On the wild mountain stream of Potomac's fast tide,
Whose waters swell on in the valley between,
Through the vast hilly regions and forests of green;
O'er a rock-bottomed track, to the blue-bosomed sea,
From its struggles to rest, like our sire of the free.

Stand up there in might, till the bright sun shall die,
Till the stars glimmer out their light in the sky,
And the moon shall no longer lend beauty or light,
But *all* shall again be dark chaos and night,—
Till then, let its base be the tall craggy steep,
Where rocks are o'er moss-grown, and ivy-vines creep;
With the Heaven's wide canopy over its head,
An immortal image of greatness that's dead.



THE VIOL SERAPHINE

INTRODUCTION.—The clear tones of a viol or bass viol are generally admitted to be more melodious than those produced by other kinds of instruments, and many have expressed a desire to see an instrument so constructed as to be played with keys, like the organ or piano forte, and give the tones of the violin. This is the character of the instrument here introduced. It is elegant in appearance; occupies less than half the space of a piano forte, and is so light and portable that a lady-performer may readily place it before her, and thus avoid the necessity,—unpleasant to all parties,—of turning her back on the company. We do not say that an instrument of this kind has been as yet constructed complete: but the principle has been proved, and it may, and probably will be soon, offered to the public, at a cost not exceeding sixty dollars.

EXPLANATION.—In the engraving, a side view elevation only is represented, showing only one string and one key of a series of twenty or more of each. The body of the machine A B, is a light hollow chest about three feet square and six inches deep, supported by four posts or legs with castors. Two bridges, C and D, extend across the breadth of the chest. The bridge D is supported by a cleat, E, in which is inserted the pin F, to which is attached one end of the string C D F. The other end of the string is simply attached to the bridge C. A key-lever, G H, passes through the bridge, and is mounted on a pivot therein. The front end of the key (G) is held in its ordinary position by a small spring thereunder, and may be easily depressed by the finger of the performer: the other end of the key serves as the bearing of the pivot of a delicate arbor, the opposite pivot of which has its bearing in the bridge D. On the front end of this arbor is a wheel three-fourths of an inch in diameter, with its periphery smooth, and polished with rosin, or rosin varnish; and so adjusted, that by the depression of the key, this wheel is brought up in contact with the string, whereby, if in motion rotarily, a full sound is produced, as if a violin bow was drawn across the string. On the other end of the arbor is a grooved pulley, over which passes a silken cord, which also passes round a delicat band-wheel, I, below, and by which, motion is communicated to the arbor and sounding wheel. The band-wheel is mounted on a shaft, I J, which has its bearings in two small head blocks which project from two crossbars: and from the block J is suspended a vertical rod, to the bottom of which is attached a treadle, K L, and from which a curved ratch, L M, extends upward and takes to a small atchet on the shaft I J; so that, by the horizontal motion of the treadle, the motion is communicated to the wheel &c. The teeth of the ratch and ratchet have so gentle an inclination on one side of each, that although the ratch applies force to the ratchet in the upward direction, they slide freely over in their return. It may be understood that the machine is to have two treadles and two ratches, which move forward alternately: and that twenty or more arbors, pulleys, strings and keys are arranged in series, although only one of each is represented in the engraving. The cord applies to each pulley in the series by passing over the first, under the second, and over the third, and so on, descending from the last of the series to the band-wheel. Each arbor is placed directly under its respective string, and it is also proposed to place moveable stops under the strings, at equal distances from the key bridge, and to regulate the tones by adjusting the stops, without depending on the pins at the ends for that purpose. We shall employ a competent mechanic to construct one or more of these instruments as soon as convenient, and give due notice accordingly.

An Eclipse in Arabia.

Casting my eyes over the bright, full moon, I perceived that an eclipse was just coming upon it. What astronomer had calculated this eclipse for Arabia? It was indeed a privilege to witness one in the bright sky that overspread the lonely mountains of Sinai. Soon we were seated in a circle, with the Arabs round their watch-fire, enquiring of them their views of an eclipse, and explaining to them ours. They appeared to have no idea of its real cause, regarding it as a judgment from God, a sign of a bad season, and little camel feed. When we undertook to explain to them the theory of the earth being round, turning over every day, sometimes getting between the sun and moon, they seemed to look upon us as telling very strange tales. The eclipse was nearly total. I gazed upon it with interest, and then eyed the strange scene around me. The wild, lonely landscape of rock and sand—the camels kneeling round the bivouac—the wild faces of the Arabs, reflecting the red light of the fire round which they were seated—their wild voices and strange guttural language, all combined to produce an effect so startling, that I felt till then I had never been thoroughly sensible of our complete separation from the civilized world.

Giving Credit.

"One of our exchanges" says one of our exchanges, "came to us this week with four of our editorials *not credited*." A frivolous complaint. Not a week passes but we find in some of our exchanges from ten to twenty of our editorials; and instead of complaining, we are thankful for being thus complimented.

The Bowie Knife and its Inventor.

This instrument was devised by Col. James Bowie, an American, and a man of desperate valor. He considered, and apparently with justice, too, that, in close fighting, a much shorter weapon than the sword ordinarily in use, but still *heavy* enough to give it sufficient force, and, at the same time, contrive to cut and thrust, would be far preferable, and more advantageous to the wearer. He accordingly invented the short sword, or knife, which has since gone under his name. It is made of various sizes; but the best, I may say, is about the length of a carving knife—case perfectly straight in the first instance, but greatly rounded at the end on the edge side; the upper edge at the end, for the length of about two inches, is ground into the small segment of a circle and rendered sharp; thus leaving an apparent curve of the knife, although in reality the upturned point is not higher than the line of the back. The back itself gradually increases in weight of metal as it approaches the hilt, on which a small guard is placed. The Bowie knife, therefore, has a curved, keen point; is double edged for the space of about a couple of inches of its length; and when in use, falls with the weight of a bill hook.—Bowie went to Texas during the troubles which preceded the independence of that country,—and was lying sick in bed at the fortress of the Alamo, when, on the 6th of March, 1836, it was stormed by Santa Anna and taken. Bowie was murdered there upon his pillow. The hand that formed the dreadful knife could no longer wield it.

Forests and Streams.

That remarkable man, Humbolt, has reduced it almost to a demonstration, that the streams of our country fail in proportion to the destruction of its timber. And of course, if the streams fail, our seasons will be worse; it must get drier and drier in proportion. Humbolt, speaking of the Valley of Araguay in Venezuela, says that the lake receded as agriculture advanced, until the beautiful plantations of sugar-cane, banana and cotton-trees, were established on its banks, which (banks) year after year were farther from them. After the separation of that Province from Spain, and the decline of agriculture amid the desolating wars which swept over this beautiful region, the process of clearing was arrested, and old lands grew up in trees with that rapidity common to the tropics, and in a few years the inhabitants were alarmed by a rise of the waters, and an inundation of their choice plantations.

Prussian Music.

The Boston Brigade Band has been presented with a copy of the collection of the celebrated martial music of the Prussian army. Prussia has long been famous for the excellence of its military bands, and the music which they have produced is of the highest order. We hope this attempt to introduce it into our city will improve the style of martial music here.

Philosophy.

"Uncle Jo," said an observing little boy, "our folks always put up the window when the room is filled with smoke, and the wind always blows in so as to prevent the smoke from going out that way: now where does the smoke go?" "It goes into the people's eyes," was uncle Jo's philosophic answer.

Polite Preaching.

A certain preacher, when treating on the subject of repentance, said, "My dear hearers, you must repent; if you do not, you will go to a place which it would be improper to mention in this polite assembly."

Mr. H. Longfellow of Cincinnati, has abou one hundred acres under culture of grapes strawberries, peaches and raspberries

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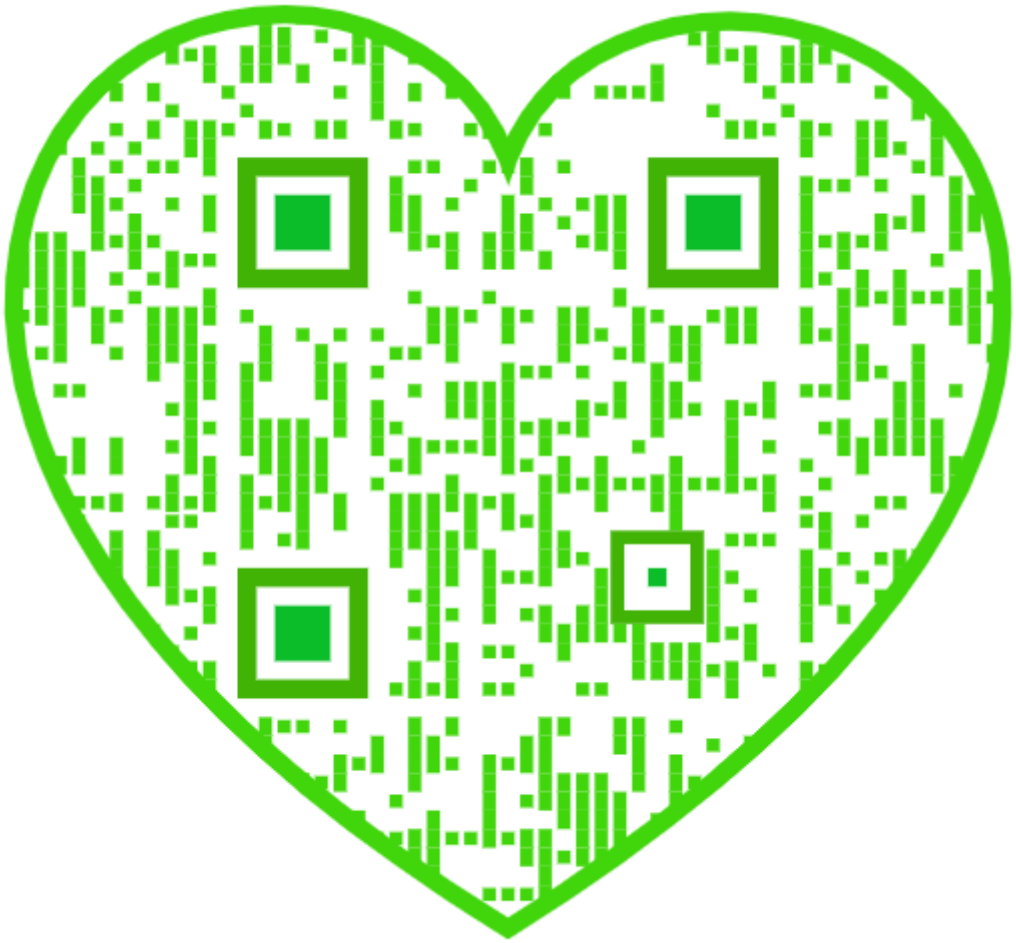

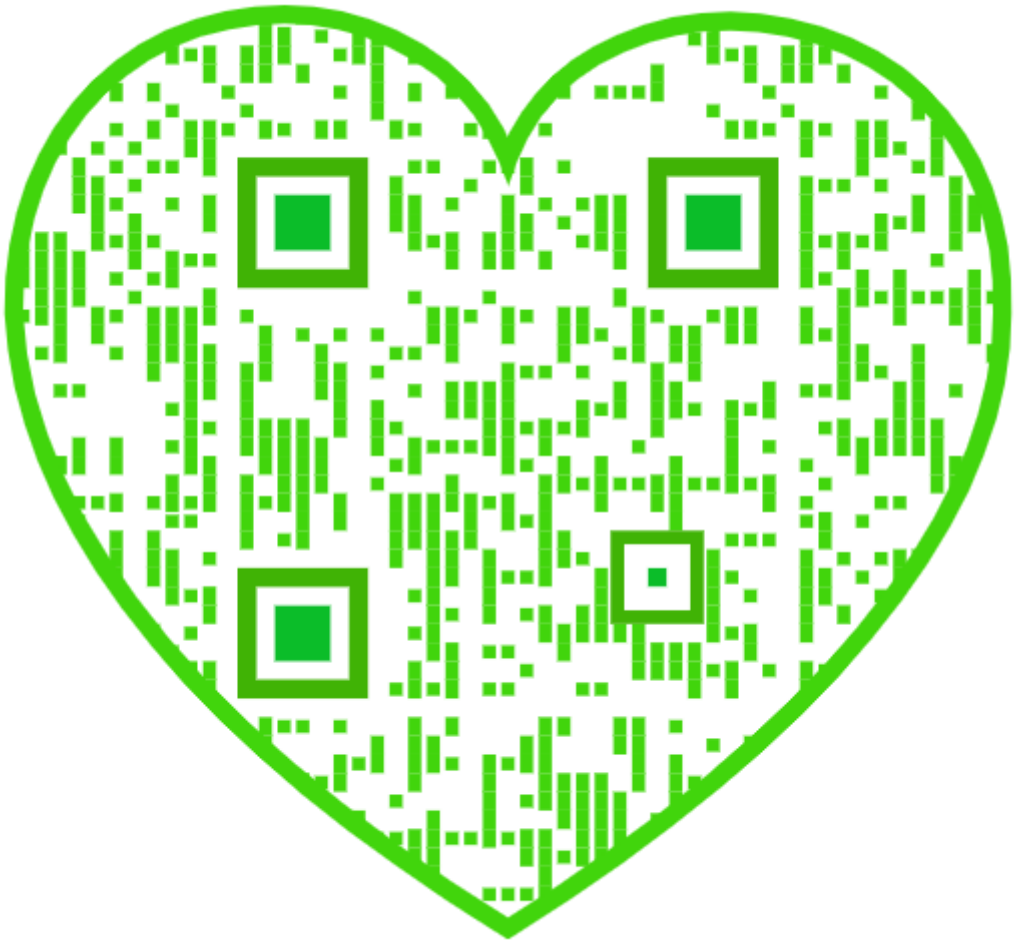

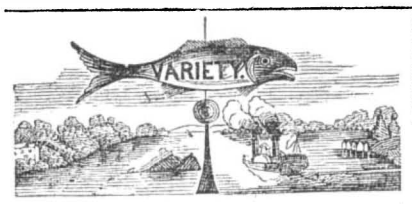

Pure Air.

Throw open the window and fasten it there!
Fling the curtain aside and the blind,
And give a free entrance to heaven's pure air,
'Tis the life and health of mankind.

Behold that dull concourse in yonder closed
With visages sluggish and red; [space,
How calmly they sit, each one in his place,
While their lungs with poison are fed.

What makes the grave deacon so drowsy at
The scholar so dull in his class? [church?
Dry sermons!—dry studies!—the brain's in the
For want of pure oxygen gas. [lurch,

Come, 'rouse, from your stupor, before it's too
And do not yourself so abuse— [late,
To sit all day with your feet on the grate;
No wonder you're getting the "blues!"

Are you fond of coughs, colds, dyspepsia and
rheums?
Of headaches, and fevers and chills?
Of bitters, hot-drops, and medicine fumes,
And bleeding, and blisters and pills?

Then shut yourself up like a monk in his cave,
Till nature grows weary and sad,
And imagine yourself on the brink of the grave,
Where nothing is cheerful and glad.

Be sure when you sleep, that all is shut out:
Place, too, a warm brick to your feet—
Wrap a bandage of flannel your neck quite about
And cover your head with the sheet.

But would you avoid the dark gloom of dis-
Then haste to the fresh open air, [ease?
Where your cheek may kindly be fanned by its
breeze;
'Twill make you well, happy and fair.

O, prize not this lightly, so precious a thing;
'Tis laden with gladness and wealth—
The richest of blessings that heaven can bring,
The bright panacea of health.

Then open the window, and fasten it there!
Fling the curtain aside and the blind,
And give a free entrance to heaven's pure air,
'Tis light, life, and joy to mankind.

The Deerfield (N. H.) Phenomena.

We have frequently heard of singular and unaccountable reports, as of explosion, in Deerfield, but nothing so definite as the following statement by a correspondent of the Portsmouth Journal.

"Mr Editor,—During the last twelve years, certain curious, not to say alarming phenomena in the town of Deerfield, N. H., have excited the fears of the inhabitants, and we think should, ere this, have attracted the attention of the scientific. These are reports or explosions in the ground, apparently of a volcanic or gaseous nature. When first heard they were attributed to the blasting of rocks in Manchester, a new town some ten miles distant; but from the frequency of the reports at all hours in the night as well as the day, from the consideration that they were so loud, and were heard in all seasons, winter as well as summer, it was soon concluded that they had some other origin. The explosions, if they may be so called, commenced on a ridge of land running S. E. and N. W. some five miles in length, and principally on that portion called the South Road. They have, however, extended, and are now heard in a northerly direction. The sounds have become louder, and during the last fall and the present spring or summer, as many as twenty have been heard in one night. Many of them jar the houses and ground perceptibly, so much so, that a child whose balance is not steady, will roll from one side to the other. They are as loud as a heavy cannon fired near the house, with no reverberation, and little roll. Last fall some of the inhabitants were riding in a wagon when an explosion was heard, and they saw the stone wall, which was apparently quite compact, fall over on one side of the way, and a second after upon the other. The stone wall of an unfinished cellar also fell in. This can be attested by many witnesses. There is no regularity in these reports, as they are heard at intervals of a day, a week, and sometimes of months: but for the last year they have become very common, and are heard almost every week more or less."

Extraordinary Instance of Gambling.

It is well known upon the western waters, that the firemen and other hands employed upon the boats spend much of their idle time in playing cards. Of the passion for gaming, thus excited, an instance has been narrated to us upon the most credible authority, which surpasses the highest wrought fictions of the gambler's fate. A colored fireman, on board a steamboat running between Saint Louis and New-Orleans, had lost all his money at poker with his companions. He then staked his clothing, and being still unfortunate, pledged his own freedom for a small amount. Losing this, the bets were doubled, and he finally at one desperate hazard, ventured his full value as a slave, and laid down his free papers to represent the stake. He lost, suffered his certificates to be destroyed, and was actually sold by the winner to a slave dealer, who hesitated not to take him at a small discount upon his assessed value. When last heard of by one who knows him, and informed us of the fact, he was still paying in servitude the penalty of his criminal folly.

Gen. Taylor's Patriotism.

In answer to the complimentary resolutions passed at a meeting in this city some weeks since, Gen. Taylor says, "It is a source of gratulation to me that the meeting refrained from the meditated nomination for the presidency. For the high office in question I have no aspirations. The government has assigned to me an arduous and responsible duty in the prosecution of the existing war: in conducting it with honor to the country lie all my real aspirations."

The Columbian Magazine.

The October number of this splendid work will be found to be equal, if not superior, to anything and everything of the kind in the literary region. It presents three superb embellishments—"A Cure for Love," mezzotint, by Sadd; "View on the St. Lawrence," fine steel engraving, by C. F. Giles, and a plate of fashions; in a new style, besides a piece of first rate music. This work is published monthly by Isreal Post, 140 Nassau st. Terms, only $3 per annum.

A Mountain in Labor.

The workmen, says a Paris paper, are still busily engaged in excavating Montmartre in quest of holy vases and other riches said to have been deposited there in early days of the French revolution by the order of Lady Superior of the Abbey of Montmartre. Two workmen, who were at the time charged with transporting the wealth to the place designated were never seen, and it is supposed that they were sacrificed to the necessity of the secret. The Superior, at her death, bequeathed the secret to a lady friend, who in turn, on her death bed, divulged it to her daughter, then 13 years of age. The child, now a sexagenary, disclosed it to the municipiality. Her statements have thus far been found scrupulously correct. The *cesarian* operation is actively going on, an excavation of fifty feet having been made, and the mountain's speedy deliverance of a mine of wealth is anticipated. May it not prove a mouse!

The Pope's Will.

The late Pope has left a fortune of eleven millions of francs, which, after some religious bequests; is to be divided among his relations! upon the singular condition that they never contest the will, and that they never take up their residence in Rome.

Improved Railroad.

The Harlem Railroad Company have laid down a section of their road with cast iron rails of a new construction, invented by Mr. Imley. These rails are highly approved, and are expected to supersede the common wrought rails to a considerable extent.

It is reported that Mr. Isaac Fisk of Massachusetts, spells his name "Eyzurk Physque." Well, what if he does?

Sagelsms.

He who is passionate and hasty is generally honest. It's your cool, dissembling, smiling hypocrite, of whom you should beware. There is no deceit about a bull dog. It's only the cur that sneaks up and bites you when your back's turned. Again, we say, beware of a man who has psalmody in his looks.

If a person is bent on quarrelling with you, leave the whole of it to himself, and he will soon become weary of his unencouraged occupation. Even the most malicious ram will soon cease to butt against a disregarding object, and will usually find his own head more injured than the object of his blind animosity. So let them kick.

An easy flow of words is no sign of an abundance of ideas. Swift made a wise comparison when he likened a well stored mind to a crowded church, where the people elbow each other, and cannot get out.

"If a civil word or two will render a man happy," said a French king, "he must be a wretch indeed who will not give them to him. Such a disposition is like lighting another man's candle by one's own, which loses none of its brilliancy by what the other gains."

In Preparation.

We have in course of preparation for future numbers, some large and elegant engravings, illustrative of some of the most interesting and deeply scientific *new inventions*, together with illustrations of architecture, geometry and magnetism. Also a variety of intelligence in *arts and trades*.

A Strong Position.

"Gentlemen of the jury," said an eminent lawyer, "there are four points in this case. In the first place, we contend that we never had the plaintiff's horse; second, that we paid him for the use of the horse; third, he agreed to let us use the horse for his keeping, without any charge; and fourth, that his horse is a jackass."

As Good as Cash.

An editor out west having asked the consent of a father to his daughter's hand in marriage, the provident old gentleman inquired how much money he could bring the bride. The editor said he hadn't got any money, but he would give her a puff in his paper. The father was satisfied.

How Very Hot It Is.

The following lines would have been inserted earlier, but the weather was so hot we could not attend to it.

Did you ever know such weather?
Seven bright burning days together!
Swelt'ring nights and broiling days,
Sultry moonbeams, sun's hot rays:
No one knows which way to turn him,
All things either melt or burn him;
Half the weight of all the nation,
Is flying off in perspiration,
And every man, and woman too,
As languidly they look at you,
Exclaims, with moist and mournful phiz,
"Dear me! how very hot it is!"

Ladies all languid in muslin array,
Loll upon couches the live long day,
Looking more lovely than we can say—
Though, alas! they are rapidly melting away
"Bring me *an ice!*" they languidly cry,
But alas and alack! it is "all in my eye"—
For before it reaches the top of the stairs,
It's turned into water quite "unawares,"
While John with his salver, looks red and stares,
And the moist confectioner inwardly swears,
As he wipes with his apron his long, pale phiz,
"Oh-pooh! how infernally hot it is!"

Oh, what treat 'twould be to wade
Chin deep fresh ice and lemonade!
Or to sit a duck marble bowl within,
And camphor gurgling around your chin—
Hissing and sparkling round your nose,
Till you open your mouth and down it goes,
Gulp by gulp, and sup by sup,
As you "catawampishly chew it up."
Refreshing your head and cooling your faces—
Burnt down as they've been with all sorts of
sauces
Oh, the fellow who thus could lave his phiz
Needn't care how hot the weather is!

A son of the Emperor Nicholas, of Russia, is now travelling in the United States. He is said to be an intelligent looking man.

California Farming.

A gentleman, writing from California to the editors of the Saint Louis Reveille, says his stock consists of about four thousand head of oxen, one thousand seven hundred horses and mules, three thousand sheep, and as many hogs. They all pasture themselves without difficulty in the rich prairies and bottoms of the Sacremento, and only require to be attended. This is done by the Indians, of whom he employs four hundred. His annual crop of wheat is about twelve thousand bushels, with barley, peas, beans, etc., in proportion.

Diversification of Language.

A poetic line from Gray admits of the following twenty-eight variations without chanigng the accent:

The weary ploughman plods his homeward way,
The ploughman, weary, plods his homeward way,
His homeward way the weary ploughman plods,
His homeward way the ploughman weary plods,
The weary ploughman homeward plods his way,
The ploughman, weary, homeward plods his way,
His way, the weary ploughman homeward plods,
His way, the ploughman, weary, homeward plods,
The ploughman, homeward, plods his weary way,
His way the ploughman, homeward, weary plods,
His homeward weary way the ploughman plods,
Weary, the ploughman homeward plods his way,
Weary, the ploughman plods his homeward way,
Homeward, his way the weary ploughman, plods,
Homeward, his way the ploughman, weary, plods,
Homeward, his weary way, the ploughman plods,
The ploughman, homeward, weary plods his way,
The ploughman, weary, homeward plods his way,
His weary way, the ploughman homeward plods,
His weary way, the homeward ploughman plods,
Homeward the ploughman plods his weary way,
Homeward the weary ploughman plods his way,
The weary ploughman, his way, homeward plods,
The ploughman, weary, his way homeward plods,
The ploughman plods his homeward weary way,
The ploughman plods his weary, homeward way,
Weary, the ploughman, his way homeward plods,
Weary, his homeward way the ploughman plods.

From the Gem of the Prairie.

"Keep that Testament in your vest pocket, over your heart."

We have been forcibly reminded of an interesting anecdote of the Revolution, while witnessing so many young men in the ranks of the volunteer companies, in connection with the highly praiseworthy resolution of the Nashville Young Men's Bible Society, to present a copy of the New Testament to each officer and private constituting the regiment quartered here.

The fond-hearted mother had assisted in adjusting upon her son the "tow frock and trowsers," had tightly secured the knapsack, canteen and cartridge box in the strings twisted with her own fingers from the same material as his clothes; as he turned, on opening the door, to speak the "manly good-bye," she suppressed the parting tear, lest it might damp the flame of freedom which fired his noble soul, and echoed the "good-bye" with a forced smile.

As she went to the window to take another look, she discovered the Testament had been forgotten; she caught it in her hand, ran to the door—called him loudly, holding the book in her uplifted hand, in order to show him why she stopped, and soon stood by his side. Without uttering a word she put the book in its place, grasped his hand, looked him full in the face, and with quivering lips, heart big with emotion, cheeks bedewed with tears of maternal affection, she spoke: "My son, I would not have you stay; your country has the FIRST claim upon you; be true to that as you have been dutiful to me, and Heaven will protect you—KEEP THAT TESTAMENT IN YOUR VEST POCKET, OVER YOUR HEART!" After faithfully serving the term of his enlistment, he returned to his home. Before he uttered a word, he took from his "vest pocket" the old Testament, and there lay a British bullet, snugly imbedded where the force of the powder had driven it, and this was the only shot he had received while fighting for his country.—*Nashville Union.*

Temperance in the Army.

We are gratified to learn that Gen. Taylor has totally prohibited the traffic in intoxicating liquors in the vicinity of the army. One fellow, persisting in the trade, was put in the guard house by Capt. Miles: and when liberated, on going to Gen. Taylor's tent with a complaint, was kicked out. He finally took marching orders *t'other way.*

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Modes of Raising Ponderous Articles.

A wedge is considered to be the most simple of "mechanical powers," and is often used in cases where no other apparatus can be made to apply; as in splitting logs and other adhesive articles. If a massive rock is to be elevated from the ground, a wedge must first be driven between that and its foundation, preparatory to the application of levers. Yet the wedge is in most cases objectionable on account of the friction with which its use is attended. The next, and most common power applied for elevating buildings on large rocks, is the simple lever, commonly called a pry. This usually consists of a long straight beam or pole, one end of which is placed under the object to be raised, while a fulcrum consisting of a stone or block of wood, is placed under the lever, at a short distance from the object to be raised. The opposite extremity then being forced down by the weight of one or more of the workmen, a force is applied to the object to be raised, bearing the same proportion to that applied to the lever, that the distance between the fulcrum and the extreme end of the lever does to that between the fulcrum and the object. Levers made of iron, and simply denominated "iron bars," are commonly used in raising and removing rocks. A machine called a "bed-screw" is frequently used for elevating buildings. It originally consisted principally of a large vertical screw, which was placed on a foundation called the "bed," and was turned by levers; but many improvements and variations have been added, till, in some instances, the screw has been dispensed with, and a rack and pinion have been substituted. Some of the best in use consist of a vertical iron rack, which is occasionally forced upward by the teeth of a pinion; a geer wheel on the same axle with the pinion being driven by the thread of a horizontal screw, to the head of which is attached a crank. By a machine of this construction, properly proportioned, one man may raise about twenty tons weight. Vertical screws, turned by levers, have been frequently used for the purpose of raising vessels to repair. But in these cases a large portion of the power applied is lost in the friction of the screw, and the process is laborious and tedious. This is probably the most awkward and injudicious method that has been applied to that purpose. Another method which has been applied to the purpose of elevating vessels, is decidedly ridiculous, although less laborious than the former. It is called the "hydraulic power," and consists in forcing water into large cylinders, by forcing pumps which are operated by steam power; while the water thus forced into the cylinder moves a piston and piston-rod, to which is connected several stout chains, which passing over corresponding pulleys, descend to a platform, on which rests the vessel to be raised. An expensive apparatus, called the "Marine Railway," constructed on the principle of the *inclined plane*, with a huge and complicated carriage to travel thereon, has been extensively used for taking vessels out of the water to repair. This plan is objectionable, however, on several accounts. It requires the application of a great quantity of power to overcome the friction of its many axles and machinery, in addition to what is requisite to overcome the gravity of the vessel. It is, moreover, injurious to the vessels which are taken up thereby, on account of its elevating the forward part, before the centre and stern become seated on the carriage. The most judicious mode in present use, for raising vessels to repair, and which must be preferred to all others, where there is a supply of water from an elevated reservoir, is on the principle of locks; the vessel being floated into one apartment, is elevated by the induction of water from above, till it can be floated over an elevated platform, where it is left at rest, while the water is allowed to pass off below. The sides of this upper box or apartment, are moveable, being attached to the bottom or platform by hinge joints, so that they may be let down to a horizontal position, thus giving the workmen the advantage of light and convenience. The "dry dock" in the Navy Yard at Charlestown, Mass., is constructed awkwardly enough; but as the vessels at that place are not *raised*, it does not come under this head The massive stones which were used in the construction of some of the ancient edifices, were evidently raised by inclined planes. A huge mound of earth was built up round the building, completely enclosing it; and the elevation of the mound kept pace with that of the edifice: thus giving the laborers a chance to roll up the stones to their places. They used no other mechanical power than the simple windlass and lever; and no other carriage than a drag, under which was placed rollers. When the building was completed, the earth was taken away, and levelled about the vicinity. The modern method of raising stones for building, and which is now used in the building of heavy stone edifices, is by the use of a set of stout tackle blocks, the *fall rope* of which is taken up by a geered windlass, operated by a steam engine; the upper block being of course attached to an elevated *shears* or derick. Vessels, and other bodies, which have been sunk in the ocean, have been sometimes raised by means of air-tight sacks, attached to different parts of the object by means of divingbells, been inflated with air, forced down through hollow tubes by pumps, till they thus acquired a buoyancy sufficient for the purpose. The power of buoyancy has also been applied for elevating vessels above water, by placing hollow trunks, filled with water, under the keel of the vessel, and then pumping them out. One of the best methods that has ever yet been proposed for raising vessels to repair, is to place under the keel a horizontal platform, to which is attached four large hollow trunks under its four corners: the trunks to be filled with water, and to have open apertures in the bottom of each. Then by allowing a stream of atmospheric air, to rush by its own expansive force from the reservoirs in which it had been previously compressed, through suitable pipes or hose, into each trunk, the water is expelled through the apertures in the bottom, and the vessel is elevated immediately, and without loss of time. In this case, the reservoirs (iron cylinders) of compressed air, may be recharged by steam or other power, during the process of repairing one vessel, and be thus in readiness for another. A patent has been granted for this invention, but it has not yet been put in operation on a scale of practical use, though the patentee would willingly give the right of the patent to any person or company who should be disposed to construct the apparatus on a large scale. We have recently given a description of Mr. Spencer's plan for elevating vessels, and some other modes have been recently projected, which we may describe in a future number.

Information to persons having business to transact at the Patent Office.

Sec. 1. The existing laws relating to patents are those approved July 4, 1836, March 3, 1837, and March 3, 1839; all former acts having been repealed by the act of 1836.

Sec. 2. "Patents are granted for any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter, not known or used by others before his or their discovery or invention thereof, and not, at the time of his application for a patent, in public use, or on sale, with his or their consent, or allowance, as the inventor or discoverer." Act of 1836, section 6. "No patent shall be held to be invalid by reason of the purchase, sale, or use [of the invention,] prior to the application for a patent as aforesaid, except on proof of abandonment of such invention to the public, or that such purchase, sale or public use, has been for more than two years prior to such application for a patent."—Act of March 3, 1839.

Sec. 3. The term for which a patent is granted, is fourteen years; but it may, under certain circumstances, be renewed for seven years, as hereinafter mentioned.

Sec. 4. Patents are granted to citizens of the United States, to aliens who shall have been resident in the United States one year preceding, and shall have made oath of their intention to become citizens thereof, and also to foreigners who are inventors or discoverers.

Sec. 5. A patent may be taken out by the inventor in a foreign country, without affecting his right to a patent in the United States, provided the invention has not been introduced into public and common use in the United States prior to the application for such patent. In every such case the patent is limited to fourteen years from the date of the foreign letter patent. A patent is not granted upon introduction of a new invention from a foreign country, unless the person who introduced it be the inventor or discoverer. If an alien neglects to put and continue on sale the invention in the United States, to the public, on reasonable terms, for eighteen months, the patentee loses all benefit of the patent.

Sec. 6. Joint inventors are entitled to a joint patent, but neither can claim one separately.

Sec. 7. An invention can assign his right before a patent is obtained, so as to enable the assignee to take out a patent in his own name; but the assignment must be first entered on record; and the application therefor must be duly made, and the specification signed, and sworn to by the inventor. And in the case of an assignment by a foreigner, the same fee will be required as if the patent issued to the inventor.

Sec. 8. The assignment of a patent may be to the whole or to an undivided part, "by any instrument in writing." All assignments, and also the grant or conveyance of the use of the patent in any town, county, State, or specified district, must be recorded in the Patent Office, within three months from date of the same.—But assignments, if recorded after three months have expired, will be on record as notice to protect against subsequent purchases. No fee is now charged for recording assignments. Patents, grants, and assignments, recorded prior to the 15th of December, 1836, must be recorded anew before they can be valid as evidence of any title. This is also free of expense.

Sec. 9. In case of the decease of an inventor, before he had obtained a patent for his invention, "the right of applying for and obtaining such patent shall devolve on the administrator or executor of such person, in trust for the heirs of law of the deceased, if he shall have died intestate; but if otherwise, then in trust for his devisees, in as full and ample manner, and under the same conditions, limitations, and restrictions, as the same was held, or might have been claimed or enjoyed, by such person in his or her lifetime; and when application for a patent shall be made by such legal representatives, the oath or affirmation shall be so varied as to be applicable to them."—Act of 1836, sec. 10.

Sec. 10. The Patent Office will be open for examination during office hours, and applicants can personally, or by attorney, satisfy themselves on inspection of models and specifications, of the expediency of filing an application for a patent.

Sec. 11. All fees received are paid into the Treasury, and the law has required the payment of the patent fee before the application is considered; two-thirds of which fee is refunded on withdrawing the application. But no money is refunded on the withdrawal of an application, after an appeal has been taken from the decision of the Commissioner of Patents. And no part of the fee paid for caveats, and on applications for the addition of improvements, re-issues, and appeals, can be withdrawn.

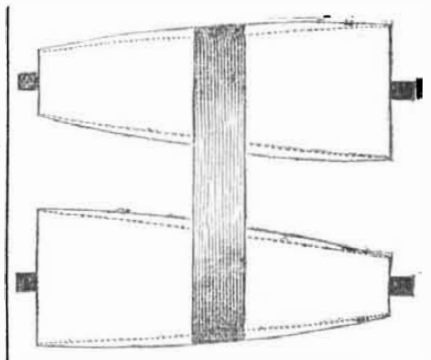
Sec. 12. It is a frequent practice for inventors to send a description of their inventions to the office, and inquire whether there exists any thing like it, and whether a patent can be had therefor. *As the law does not provide for the examination of descriptions of new inventions, except upon application for a Patent, no answer can be given to such inquiries.*

A sentimental writer says it is astonishing how much light a man may radiate upon the world around him, especially when the body he admires is beside him.

Among the persons who recently laid in the Boston jail over Sunday, and were fined Monday morning for intemperance or rowdyism, were a member of the bar and a clergyman.

Said a bishop to a rough wagoner, "you seem better fed than taught." "Of course," replied the fellow, "for we *feed* ourselves, but for teaching, we depend on *you*."

The R g



The use of a pair of conical drums in reversed position, and connected by a band, as shown in the cut, has been known for several years to a few, but yet are not extensively known, and but few of them have been seen in operation in this country. It will be seen that if the band be removed laterally, either to the right or left, the relative motion of drums will be materially varied. These drums being arranged to constitute a connection of motion between the driving power and driven machine, may be made to render the motion of the latter either regular or irregular at the option of the operator. If the band conneting the drums, is governed by a shifting lever connected with a *governor*, it may be so adjusted as to keep the motion of the machine regular, although the driving power should be irregular in its motion, as is the case with a wind-wheel. But if the operator is engaged, requires a more rapid motion at one time than at another, he can accommodate himself by shifting the position of the cone-band, to the right or left, as occasion may require. This is very convenient for turners, whose business requires at some times a rapid speed of the mandrill, and at other times a slow or gentle motion. These drums, as represented, must be swelled in the centre, that the band may be kept uniformly straight.

A Remarkable Mineral Spring.

It may not perhaps be generally known even to our own citizens that there is in the town of Riga, N. Y., one mile east of Churchville, on the farm of Linus Pierson, a Mineral Spring, the gases from which are sufficiently combustible to burn as clear and brightly as a lamp, at all times of the day and night, and which is never exhausted. The spring is located near the bathing-house on the farm, and a tube has been constructed, leading from the spring to the rooms, by means of which the house is made sufficiently light without the use of lamps. Some time ago the State Geological Surveyors paid this spring a visit, and analyzed the gas, which was found to be composed of sulphurated and carbonated hydrogen. The water is strongly impregnated with iron.

Cool Forethought.

One of the most admirable instances of prudential forethought we ever heard of, occurred in Boston a few days since. Three Irishmen were engaged in taking down a wall in Mount Vernon street. The wall fell upon and buried them. A lady from the opposite side of the street rushed out, and calling to those who were rescuing the poor fellows, said, "Bring them in here. Bring them in here. I have been expecting this all day." The men were carried into her house, and, true enough, she had "every thing ready," bandages, lint, laudanum, and all. If this be not an instance of *cool forethought*, we know not what is.

It May Be So.

It is stated in a Cincinnati paper, that the body of a drowned child has been discovered by means of a loaf of bread in which was deposited a quantity of quicksilver. The loaf was sent afloat in the canal, and after floating some distance, remained stationary, and beneath the spot thus indicated, the child was found. That mercury may have a natural attraction towards a human body, is possible; but the use of the loaf of bread in combination, indicate a superstitious faith rather than real science.

Several rich lead mines have recently been discovered on the Mississppi River, a few miles above Bellevue. The unusual low state of the river lead to this discovery

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NEW INVENTIONS.

Howe's Sewing Machine.

We have heretofore noticed the extraordinary invention by Mr. Elias Howe, Jr., of Cambridge, Mass.—a machine that sews beautiful and strong seams in cloth as rapid as nine tailors. We are not yet prepared to furnish a full description of this machine, but the following claims, in the words of the patentee, may give some idea of the various parts in combination. This machine was patented September 10th.

"I claim the lifting of the thread that passes through the needle eye by the lifting rod, for the purpose of forming a loop of loose thread that is to be subsequently drawn in by the passage of the shuttle; said lifting rod being furnished with a lifting pin, and governed in its motions by the guide pieces and other devices.

"I claim the holding of the thread that is given out by the shuttle, so as to prevent its unwinding from the shuttle bobbin, after the shuttle has passed through the loop, said thread being held by means of the lever, or clipping piece.

"I claim the manner of arranging and combining the small lever, with the sliding box in combination with the spring piece, for the purpose of tightening the stitch as the needle is retracted.

"I claim the holding of the cloth to be sewn, by the use of a baster plate, furnished with points for that purpose, and with holes enabling it to operate as a rack, thereby carrying the cloth forward, and dispensing altogether with the necessity of basting the parts together."

Steering Apparatus.

Mr. R. C. Holmes, says the United States Gazette, has invented a new application of the tiller rope to the wheel for steering vessels, and has prepared a model of the whole application, tiller-frame, wheel, and rope, so that the properties of the invention can be easily discovered. The advantages are that there is no slack made; and, consequently, there is no chafing, and a single hand at the wheel will do the ordinary work of two men.

Electro-Magnetic Boat.

It is stated in some of our exchanges, that Dr. Page, of Washington, has perfected a boat to be propelled by the electro-magnetic power. We know of no man better qualified to produce and introduce successfully such an invention, and we feel assured that whatever enterprise Dr. Page undertakes in that line, will be very apt to go ahead. We hope soon to obtain further intelligence on the subject.

It is reported that the British government has granted $100,000 per annum to the royal company of Atlantic steamers, for the establishment of a post route to the Pacific, across the Isthmus of Panama.

Improvement in Boats.

There is a model of a steamboat to be seen on the Chesapeake, invented and constructed by Cyrus Williams, Esq., which is exciting considerable interest among steamboat men. It is in the usual form of a boat, but more flat-bottomed, and much longer in proportion to its width, than the boats now in use, giving it a greater surface to the water, and of course a lighter draught. The improvement is in applying the bridge principle of bearers in supporting length of boats. It looks perfectly feasible. Mr. Williams thinks it will be a great saving of expense, as it takes much less timber, and all of it can be sawed in a mill, being straight stuff. He offers to build a boat on this model, furnishing one third of the stock, and if it does not make 25 miles to the hour, he will forfeit his share.

Casting Iron Cannon by a Galvanic Process.

A hoaxical looking article, under the above caption, is going the rounds, and represents that successful experiments on this subject have been recently made at Berlin. As no description or illustration of the process or principle is given, we leave the subject for those who are ever ready to swallow whatever appears in a newspaper, without regard to probability.

New Shingle Machine.

Among the patents particularly noticed in the Commissioner's report, is one for a shingle machine, which cuts the shingles in a peculiar form. The shingles cut by this machine does not taper from one extremity to the other, but the taper is confined to about half the length of it at one end, the faces of the remaining half being parallel to each other. This shape of the shingle avoids the bending which is incident to those of the ordinary form, when nailed upon the roof—an object well worthy of attainment.

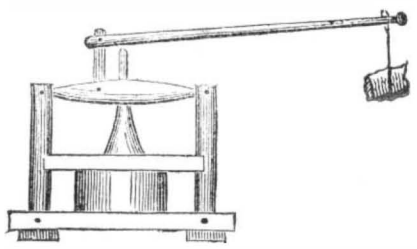
Improvement in Blacksmiths Forges.

This invention was entered at the Patent Office on the 15th instant, by James K. Hobbs. The inprovement consists in the placing of grate-bars at the bottom of the fire chamber, below which is an open air chamber into which the cinders and ashes fall through the grate, instead of accumulating and clogging the fire chamber. The cinders may be drawn out of the air chamber by an opening at the side of the forge. The blast is admitted above the grate, and the mouth of the air chamber being ordinarily closed, the blast is not affected by the grate. We think it must prove a useful invention.

Improved Fire Engine.

This improvement consists in part, in the arrangement of two sets of levers and hand poles on each side, in such a manner that "when force is applied to the hand-poles of the outside levers, in a reverse direction to that which is applied to the hand poles of the inside levers, both powers will agree in forcing the pistons of the pumps in one and the same direction, while the reverse motion of the levers will prevent the engine from rocking. Entered at the Patent Office, on the 19th instant, by Barton & Button.

A simple Cheese-Press.



An ingenious mechanic, not long since, hearing some persons conversing on the ordinary cost of cheese-presses, which is generally from three to six dollars, boldly averred that he could build a cheese-press in one hour, which would answer a good purpose as such, and which might be afforded for fifty cents. Being bantered on the subject, he went to work, and by means of a good lathe and boring machine, he actually produced his cheese-press within the hour; though not very smoothly finished. We give a sketch of it at the head of this article,—too plain to require explanation. Subsequently, several others were made on the same plan.

Cast Iron Roofing.

A specimen of cast-iron plates for roofing of buildings, says the Philadelphia Ledger, has been exhibited at the Exchange, in Philadelphia, by the inventor and patentee, Mr. Wm. Beach. The plates are about a foot square, and are made to fit one into another so as to render the roof perfectly water-tight, with the application of white lead to the joints. In every respect this material for roofing is preferable to any other description now in use. As to its durability, there can be no doubt that it would remain perfectly whole for ages, if covered occasionally with a coat of paint, and even without that preservative, rust would not affect it materially for a period of fifty years at least. As compared with copper, the cost would be nearly one half, as it is expected the iron can be furnished at 16 cents per square foot, while copper would at the most moderate estimate cost 28 cents. As regards the weight of an iron roof, which at first sight would appear an objection, it is far less than one formed of slate, and does not much exceed one of copper. The iron plates weigh three and a half pounds per square foot. A slate roof would cost about eight cents per square foot, but for durability, and the ease with which it can be put on and made water tight, the iron roofing would appear to be far preferable. The plates exhibited were cast at Troy, New York, and are of the very best quality. The patent for the eastern States is now owned by Mr. Hiram Hemmistone, of Troy, in which neighborhood the adaptation of such a durable material for roofing is rapidly attracting public attention there. Starbuck's machine shop and foundry at Troy has been covered on this plan, and it has also been adopted for the roofing of an arsenal at West Point.

The New and Wonderful Pavement.

We presented in a late number, a brief extract from an article on this subject from the "Eureka," and should have thought no more of it, had we not observed the following notice editorial in the N. Y. Farmer and Mechanic. We copy the article entire, that our readers may judge for themselves whether the style and statements savor most of reality or humbug.

"NEW PAVEMENTS.—A new system of making streets has been made known to us;—but as it will be the subject of Patents, here and in Europe, we can only give some of its most prominent features. A material or composition, of a very cheap character, has been invented, as hard, strong and compact as flint. It is formed into any desirable shape in the course of manufacture. From this, streets of any grade may be formed, and in such a way as to entirely secure a permanent and level surface to its proper arch; it can be taken up in five minutes, so as to get at the water pipes, and on being replaced will, from necessity, resume its first position. In durability, it will last ten times as long as granite, and twenty times as long as the common paving, without liability to require repair. It is so laid that frost and storms cannot affect it. But we shall have occasion to refer to it again.—Persons wishing information may inquire of Kingsley & Pirsson, No. 5 Wall street.

To render Shingles Durable.

One of our exchanges mentions an experiment which was made twenty-seven years ago, of dipping shingles in hot linseed oil prior to nailing them on the roof: and although they have not been painted, they are said to continue perfectly sound as when first put on. They were of the common pine, and as much exposed as roofs in general. This instance may be sufficient to establish the fact that shingles thus prepared, will last longer without painting than they could possibly be preserved by painting in the usual way. As a security against fire, however, we should recommend that they be first dipped in a hot solution of common salt; and afterward, when dry, be dipped in the hot oil. The expense will be trifling, and there can be no doubt of their durability, and there will be no danger of their taking fire from sparks or cinders.

Best Plan of a Barn.

Perhaps no building on the farm in the Northern States is of more importance than the barn. Those who have had the charge of cattle during our long winters, can at once see that much time and hard labor could be saved by a judicious arrangement of stalls, and bay or bay lots, granaries, &c., so that every creature could be fed by taking as few steps as possible. One very important thing to be considered, is the best mode of preserving as well as collecting manure, so that it shall retain all its valuable properties in the spring, and be easily got out. We like the plan of having a barn on the side of a hill, and so arranged that you may drive your cart load in pretty near the ridge pole, and thus pitch most of your hay down instead of up. Having your stalls under the hay, you can continue to pitch the hay down, and if you have a cellar beneath, you can throw the manure down also, and thus make the attraction of gravitation perform much of the labor of transportation from the mow to the manure cart.

The Westfield, Mass., News-Letter states that there are between 25 and 30 manufacturers of whips in that town, who employ not less than 1000 braiders, besides their shop hands.

Robert Fulton.

Robert Fulton, a celebrated engineer, whose name is connected with steamboat navigation, was born in the town of Little Britain, in the state of Pennsylvania, in 1765. His genius disclosed itself at an early period. He was attracted to the shops of mechanics; and at the age of seven he painted landscapes and portraits in Philadelphia. Thus he was enabled in part to purchase a small farm for his widowed mother. At the age of twenty-one, he by the advice of his friends repaired to London, to place himself under guidance of Mr. West, the painter, and by him was kindly received, and admitted as an inmate of his house for several years. Prosecuting his business as painter, he spent two years in Devonshire, where he became acquainted with the duke of Bridgewater and with lord Stanhope, well known for his attachment to the mechanic arts. In 1793, he engaged in the project of improving inland navigation, and in 1794, obtained patents for a double inclined plane, and for machines for spinning flax and making ropes. The subject of canals now chiefly occupied his attention, and at this period, in 1796, his work on canals was published. In his profession of civil engineer he was greatly benefitted by his skill in drawing and painting. He went to Paris in 1797, and being received into the family of Joel Barlow, he there spent seven years, studying chemistry, physics and mathematics, and acquiring a knowledge of the French, Italian, and German languages. In Dec. 1797, he made his first experiment on sub-marine explosion in the Seine, but without success. His plan for a sub-marine boat was afterwards perfected.—In 1801, while he was residing with his friend, Mr. Barlow, he met in Paris Chancellor Livingston, the American minister, who explained to him the importance in America of navigating boats by steam. Mr. Fulton had already conceived the project as early as 1793, as appears by his letter to lord Stanhope. He now engaged anew in the affair, and at the common expense of himself and Mr. Livingston built a boat on the Seine, in 1803, and successfully navigated the river. The principles of the steam engine he did not invent; he claimed only the application of that machine to water wheels for propelling vessels. In 1806, he returned to America; he and Mr. Livingston built, in 1807, the first boat, the Clermont, 130 feet in length, which navigated the Hudson at the rate of five miles an hour. Nothing could exceed the surprise and admiration of all who witnessed the experiment. The minds of the most incredulous were changed in a few minutes. Before the boat had made the progress of a quarter of a mile, the greatest unbeliever must have been converted. The man who, while he looked on the expensive machine, thanked his stars that he had more wisdom than to waste his money on such idle schemes, changed the expression of his features as the boat moved from the wharf and gained her speed, and his complacent expression gradually softened into one of wonder. The jeers of the ignorant, who had neither sense nor feeling to suppress their contemptuous ridicule and rude jokes, were silenced for a moment by a vulgar astonishment, which deprived them of the power of utterance, till the triumph of genius extorted from the incredulous multitude which crowded the shores, shouts and acclamations of congratulation and applause. In February, 1809, he took out his first patent. In 1811 and 1812, he built two steam ferry boats for crossing the Hudson; he contrived also a very ingenious floating dock for the reception of those boats. In 1813, he obtained a patent for a sub-marine battery. Conceiving the plan of a steam man-of-war, the government, in March 1814, appropriated $320,000 for constructing it, and appointed him the engineer. In about four months, she was launched with the name of Fulton the First; but before this frigate was finished, Fulton had paid the debt of nature.

The population of Great Britain for the last ten years shows an average annual increase of 230,000. The population of London has inincreased 27 per cent. within fifteen years.

Within the last 16 years, 612 steamboats have been buit in Pittsburg—besides 31 the present year.

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NEW YORK, SEPTEMBER 26, 1846.

INTRODUCTION TO VOLUME II.

With our best bow, we present ourselves before our friends and the public, in a new dress, from head to foot, and though conscious of appearing rather plain and quaker-like, we can assure our friends that in this, we conform to the newest fashion, and have no doubt of being treated civilly by as large a portion of the public, as if we had appeared with more gay feathers in our cap, with starched ruffles and gilt buttons and trimmings. In this, however, we would not be understood to boast of any peculiar evidence of taste of our own, as we have been induced in this instance, to submit wholly to that of our tailors, who it must be conceded, understand these things much better; while we have only to regard alertness and independence of movement, with a little vivacity, and intelligence of conversation.—Our general principles, and rules of self-government will continue according to our original pledge, and the policy pursued in our first volume: we shall endeavor to encourage and excite a spirit of enterprise and emulation in artists, manufactures and mechanics, while we present such instruction and useful intelligence in arts and trades, practical science and new discoveries, inventions and improvements, as will add to the facilities of enterprise, and conduce to the prosperity and independence of the working class in particular. And that we may furnish an acceptable family newspaper, we shall continue to give in a brief and condensed form, the most useful and interesting intelligence of passing events,—not omitting a small portion of serious matter, suitable for Sunday reading, but avoiding the disgusting and pernicious details of crime, with which too many of our public journals abound, and which evidently produces a deleterious effect on the morals of the community. With regard to political and sectarian subjects, however, we feel much inclined to change our style of neutrality so far as to advocate all parties, sects and denominations, each in its turn, which course may be more in accordance with our own maxim of "enlightening and pleasing," than either growling policy, or the affected indifference and cold inattention which tends to produce a reciprocity of coldness, and pleases none. On the subject of policy and rules, we might say more; but having already said twice as much as we at first intended, and finding ourselves near the bottom of the scrap on which we scribble, we have only to find some suitable form of sentence wherewith to round off this subject; and for this purpose, without wishing to be suspected of any motives of interest, we would gently and respectfully suggest to our readers the propriety of advancing the intelligence, enterprise and consequent prosperity of the community, by introducing and recommending to the patronage of all, this same SCIENTIFIC AMERICAN.

Advantage of Low Fares.

During the month of July, 1845, when the fare between New York and Boston was reduced to the "ruinous rates" of only two dollars, the receipts on the different routes were $45,208; but during the corresponding month of the present year, with the fare up to four dollars, the receipts have been only $35,963: being *nine thousand two hundred and forty-five dollars* less for a single month, than when the fares were at half-price.

Avalon Railroad Iron.

The Covington Manufacturing Co. at their Avalon works, near Baltimore, are now delivering, under their contract, the iron for the Baltimore and Ohio Railroad. This iron is made exclusively of the best quality of Baltimore charcoal pig iron. The fixtures by which it is manufactured are of the most approved description, and embrace several original improvements, by means of which nearly every bar is made perfect.

The Magnetic Telegraph.

LINE TO BURLINGTON, VT.—A movement appears to be in progress in Vermont for establishing a line of telegraphic communication from Springfield or Albany to Burlington. Much confidence is expressed by some of the Vermont papers that the enterprise will be carried through.

It is stated that the Magnetic Telegraph will be extended from Washington city to Richmond, and completed before the middle of December next.

TELEGRAPH TO CANADA.—It affords us great satisfaction, says the Montreal Herald, to learn that there is a great probability of the "lightning lines"—the Electric Telegraph—being extended from the great cities of the United States to Montreal and Quebec. A gentleman is now in town, and has submitted proposals to the Board of Trade for making an immediate commencement with this most important public work. This line is expected to be extended to Montreal from Saratoga, to which place a line is already in operation.

The line between New York and Buffalo having been recently completed, the following is reported to have been the first telegraphic conversation on the occasion.

GENERAL CHAT BY LIGHTNING.—At one o'clock, P. M., precisely, the Telegraph Line was connected through the whole distance from New York to Buffalo, 507 miles.

Upon turning the adjusting screw of the magnet by Prof. Morse, all things were found right, and Prof. Morse sent his compliments to all the operators on the line.

The first to answer was Albany.

"The compliments of the *Albany* Office to Prof. Morse and Mr. Wood."

"*Utica* Office wishes to be remembered to Prof. Morse and Mr. Wood."

"*Auburn* Office sends compliments to Prof. Morse and Mr. Wood."

"*Buffalo* sends compliments to Prof. Morse and Mr. Wood, and presents *Lake Erie* to *Old Ocean*."

"*Rochester* Office sends compliments to Prof. Morse and Mr. Wood, and presents *Erie Canal* to *Croton Aqueduct*."

"*Auburn* presents *State Prison* to the *Tombs*."

"*Syracuse* sends compliments to Prof. Morse, and asks how are the Yorkers."

"*Troy* says, Now give me a chance. Compliments to Prof. Morse and Mr. Wood; and now for business, if there is any."

"*Utica* asks, Need we keep dark any longer?"

"*Troy* answers, No. Announce it to the four winds that Buffalo and New York *are no longer separated—they talk to each other by lightning*."

This entire dialogue occupied somewhat less than *five minutes!*

Setts of thirty-six numbers of the last volume of this paper, may be had for one dollar—very cheap. Any one desiring them may enclose the amount to the publishers.

Advertising in London.

A new and "improved" mode of advertising has been introduced in London; which is to furnish laborers, carmen, &c. with white frocks or jackets, on the backs of which are printed in large characters, the advertisements of hotels, tradesmen, &c. The wearers of the *bills* are generally allowed a small compensation.

Deerfield Bridge.

The railroad bridge at Deerfield, Mass., is said to be a splendid affair. It is fifty feet above the traveled stage road bridge, and nearly eighty feet above the waters of the river. The piers are already erected, and nearly ready for the superstructure.

The Artesian well at South Boston has been sunk to the depth of nearly 400 feet. The boring machine is worked by steam power, and progresses about 12 feet per day.

Some impudent doctor says that tight lacing is a public benefit; for it kills off the foolish girls, and leaves the wise ones for good wives nnd mothers.

An exchange remarks—"When we see a man kick a horse, we say at once, that he never need come to court our daughter, for he should not have her if he was worth a million."

Information Wanted.

Mr. Editor,—I have a saw-mill which draws thirty-six square inches of water, under thirty feet head. I wish to build another below with only twenty feet head of water. How many square inches aperture will be required to discharge the same quantity in the same time? If some of your correspondents will give me an answer, they will much oblige me. R. C.

Navarino, Sept. 7, 1846.

We shall have no occasion to depend on correspondents for the intelligence above required. Thirty-six inches of aperture under thirty feet head, will admit the discharge of 660 cubic feet of water per minute; the velocity of the water being forty-four feet per second. Under twenty feet head the velocity is only thirty-six feet per second, and consequently forty-four inches aperture is required to discharge an equal quantity.

Rule in Hydraulics: (never before published.) To ascertain the velocity of water issuing through an aperture under a given head: Multiply the head in feet by 62, and the square root of the product will show the velocity in feet per second.

Railroad Intelligence.

Old Colony Railroad, from Boston to Plymouth, Mass., has for some time past been in full operation, and is doing a fair business.

The whole amount of the stock of the Michigan Central Railroad—$2,000,000—has been taken up, and of course the enterprise will go forward.

On the first day of the opening of the subscription books for the stock of the New York and Boston Railroad, the people of Middletown took shares to the amount of $350,000; and they expect to go up to half a million.

The Cheshire N. H. Railroad is going ahead rapidly, the grading and bridging on every part of the line being in progress. This road is to be carried over the Connecticut River at or near Bellows' Falls.

The stock of the Wilton N. H. Branch Railroad is said to be all taken up.

A General Meeting of the proprietors of the St. Lawrence and Atlantic Railway was recently held at Montreal. It appears by the report of the board of directors, that 5,364 shares had been taken up, amounting to about £1,200,000. All parties appear to be confident that this road will be constructed and in operation at an early day.

The Little Miami Railroad having been opened to Springfield, is doing a fair business, and adds important facilities to trade in that section.

The directors of the New York and Erie Railroad are said to be "going on with it in the right way to accomplish the great object of the undertaking." Contracts are already made for the construction of the road as far as the valley of the Delaware. Proposals for grading 133 miles more are advertised for, which will carry the road to Binghampton, 270 miles from New York.

It is asserted that of all single marriageable ladies who reached Oregon last season, two-thirds were married before the first of March.

Alexandria has decided on re-annexation to Virginia, by a vote of 633 to 197. Probably some of her citizens want to be Governors and Representatives.

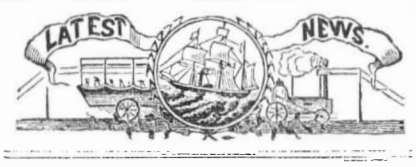
The arrival of the new steamship Southerner in Charleston, 57 hours from New York, excited much admiration. She brought 125 passengers; and was pronounced decidedly the handsomest vessel seen in those waters.

The price of flour at Buffalo, on the 18th inst., was $3 70 per barrel. Corn, 49 cents per bushel.

Mr. J. B. Gough, who has been for some time seriously indisposed, has nearly recovered his health, and returned north.

Gold is imported from St. Petersburgh to London, at the rate of $500,000 per month.—The mining business in Russia is increasing.

The Boston Common Council charge $600 per annum for the licenses of the Howard and National Theatres, with the condition that spirituous liquors shall not be sold, and no female admitted unless in company with a male.



Arrival of the Cambria.

The steamship Cambria arrived at Boston on Friday, the 18th inst., thirteen days from Liverpool. From the news by this arrival, we select the following brief items:—not very interesting, but better than none.

The man Henry, who lately attempted to shoot the King of France, has been tried and condemned to work in the galleys for life.—During his trial, he expressed a wish to be condemned to death, but the request was not granted.

The Bank of England has reduced its rate of interest to 3 per cent., whereby greater facilities are given to trade to counteract the depression likely to proceed from other causes.

The British ship America recently arrived from the coast of Mexico and Peru, liberally laden with specie, the amount whereof is stated at *six millions of dollars*, which, in silver, would make nearly two hundred and fifty tons.

The Queen of Spain, Isabella, has decided to marry her cousin, the Duke de Cadiz; thus putting to rest a subject which has long agitated the circles of royalty in Europe.

Late news from the east furnishes the report that robberies and piracies are of hourly occurrence in the immediate vicinity of Hong Kong. An ordinance had been promulgated in China for the relief of debtors.

The Cambria brought 133 passengers, among whom were Hon. Washington Irving, our late minister to Spain, and the celebrated "Cruikshanks," the caricaturist.

The Mexican War.

The latest news from Mexico, and from our army, represent affairs in a most quaint and ludicrous light, with regard to the policy and movements of all parties. The average progress of the army of invasion appears to be about three miles a day, with no opposition, nor prospect of any; while the Mexicans are tame as bullfrogs, showing no disposition to either fight or run. Gen. Parades having got sick of his job, has suffered himself to be imprisoned at the approach of Santa Anna, who has returned and resumed the government without opposition. Mr. Polk having sent an embassy, virtually asking permission to "give it up," has been refused a hearing, unless he will first withdraw our troops from the Mexican territory; while the Mexican army appointed to combat and conquer Gen. Taylor, remains at ease and content at Mexico, calculating, probably, that the longer they wait, the less distance they will have to travel to encounter the Yankees. Whether our President will call off Gen. Taylor with the American troops, before they reach anywhere in particular, remains to be decided.

Trade to Santa Fe.

The trade to Santa Fe is said to be much greater this year than ever before. Thirty-nine companies of traders have gone out this season, taking with them four hundred and thirteen wagons, which are in the charge of about eighteen hundred men. The value of the goods carried out by these traders, is estimated at nearly a million of dollars.

A large mastiff dog picked up a favorite lap dog in the upper part of the city last week, and ran off with it. He was pursued by a mob, and after a severe chase, the terrified pet was recovered and brought back rejoicing.

THE
SCIENTIFIC AMERICAN.

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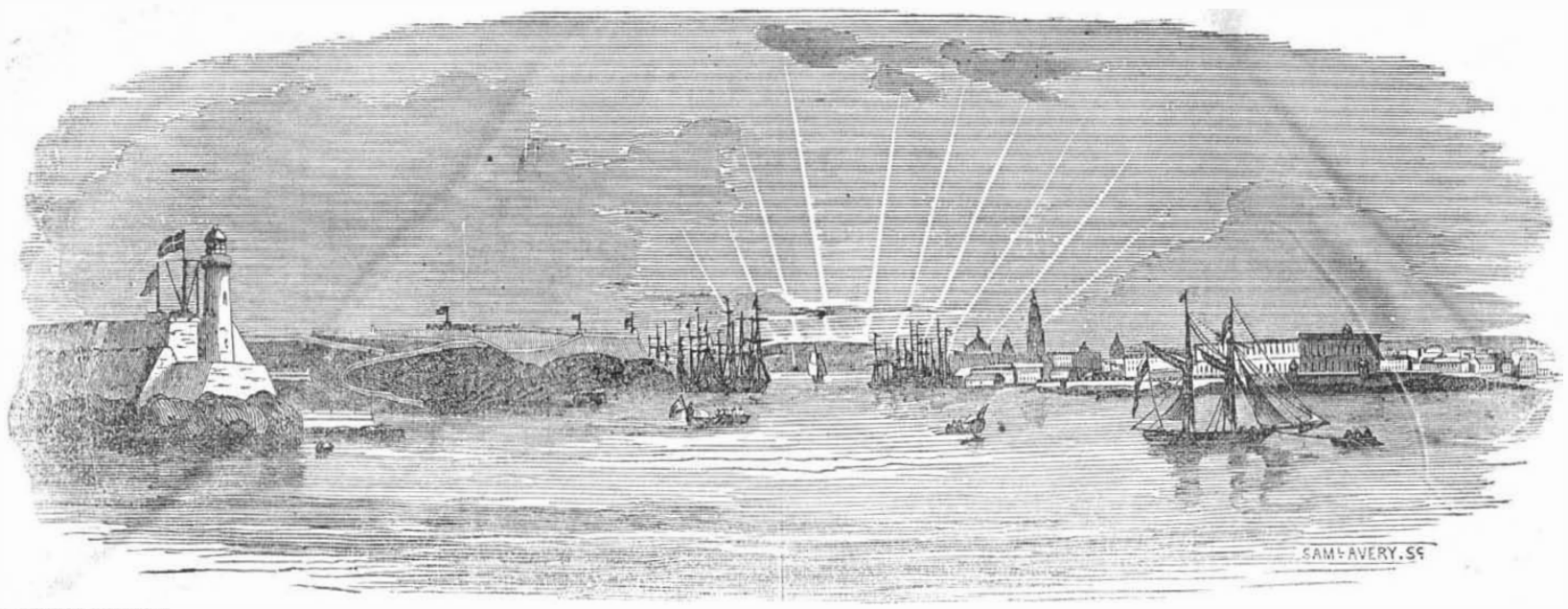

THE HARBOR OF HAVANA.

Our engraving represents a view of the harbor of Havana, which is one of the most commodious in the world, communicating with the sea by a channel little more than half a mile in length, and from 300 to 350 yards wide; its depth varying from eight to ten fathoms. The harbor itself is an oblong basin, surrounded by heights which usually shelter it from the wind.

Havana is a place of considerable strength, and, besides the walls and ditches which surround it, the city is defended by six strongholds, called the Moro, the Cobanas, No. 4, the Atares, the Principie and the Putna. The first and last serve to protect the entrance of the harbor, the second is a sort of citadel, and the others are so placed as to cover the approaches by land. The line of fortifications embraces a sort of irregular polygon of an eliptical form, the greatest diameter of which is 2,100 yards, and the smallest 1,200 yards in extent. The entrance between the Moro and Putna, castles is about 1,500 yards long, and in its narrowest part 350 yards wide. In the arsenal of the Havana, there have been built 49 ships of the line, 22 frigates, 7 packet ships, 9 brigs of war, and 15 schooners of war.

The town is built on the western side of the basin, near the channel, on a kind of promontory. The suburbs, or *barrios esta muros*, cover more ground and contain a larger population than the city itself, and yet they are so intimately connected with it, that the first of the houses in the surburban streets stands on the very edge of the *glacis*.

The streets are narrow, crooked, and generally unpaved, but they contain some well-built houses. There are, too, several good buildings among the churches, one of which contains the remains of Christopher Columbus. The other large edifices, as the Palace of the Government (shown to the right of the engraving,) that of the commandant of the marine, the arsenal, the post-office, and the building used for the manufacture of tobacco, are less remarkable for their architecture than for their solidity. Besides these, the city contains nine parish churches; six other churches, connected with hospitals and military orders; five chapels or hermitages; the Caza Cuna, a foundling hospital; and eleven convents, four for women, and seven for men. The other public establishments are the University, the colleges of San Carlos and San Francisco de Soles, the Botanic Garden, the Anatomical Museum and lecture rooms, the Academy of Painting and Design, a school of Navigation, and seventy-eight common schools for both sexes. These places of education are all under the protection of the Patriotic Society and the municipal authorities. The charitable institutions consist of the *Caza de Beneficencia*, for both sexes, a penitentiary, a Magdalen Asylum, and seven hospitals—one of them contains a lunatic asylum. There are, besides, three theatres, an amphitheatre for bull fights, *plaza de toros*, and several public promenades, such as the Alameda and the Paseo Nuevo; In Turnbull's "Travels in Cuba," published by Longman & Co., London, 1840, the city is said to contain 3,671 houses within the walls, all built of stone; and in the suburbs, 7,968, of various materials. The number of private carriages for hire amounted, in 1827, to 2,651, and they are certainly now more numerous. In the same year, the population was 122,023—the whites were 46,621; the free negroes, 15,347; the free mulattoes, 8,215; the negro slaves, 22,830, and the mulatto slaves 1,010.

Turnbull, speaking of the *Real Caza de Beneficencia*, says: "Girls are not admitted to the institution after 10 years of age; and, being entirely supported there, they are completely separated from their parents and their families, until the time of their final removal from the establishment has arrived. They are taught the various branches of needle-work and dress-making, and receive such other instruction as may sufficiently qualify them for becoming domestic servants, housemaids, cooks or washerwomen. They are not suffered, by the regulations, to remain in the house after the age of twenty-one: but, before that time, it is the duty of the *junta*, or committee of management, to endeavor to procure employment for them either in a private family or in some house of business. Should the circumstances of the parents have improved during the stay of their daughter at the institution, they are not suffered to take her away until they have paid her previous board and education at the rate of fifteen dollars a month; but if the girl herself has acquired property by inheritance, or is able to improve her condition by marriage or otherwise, independent of her parents, she is suffered to leave the house without any payment; and, in the event of her marriage to the satisfaction of the junta, a little dowry is provided for her, amounting to $500, from a fund created from prizes in the lottery, the produce of tickets presented to the institution. Six such marriages had taken place, and dowries bestowed from this fund in the course of a single year." This lottery business shows the spirit of gambling so largely developed in nations of Spanish decscent. The Mexicans are noted for it, and Santa Ana, who spent his exile in Cuba, and recently sailed from Havana for Vera Cruz, indulged in the propensity to a great extent. But he had two strings to his bow, and whilst playing his fighting cocks was also playing for an empire, and has won the game. How long he will hold it remains to be seen.

HUMOROUS.

A Very Long Nose.

A gentleman having put out a candle by accident one night, ordered his waiting man (who was a simple being) to light it again in the kitchen, adding—"But take care, James, that you do not hit yourself against anything in the dark." Mindful of the caution, James stretched out both arms at length before him, but unluckily, a door that stood half open, passed between his hands and struck him a woful blow upon the nose. "Golly gracious!" muttered he, when he recovered his senses a little, "I always heard that I had a very long nose, but I never thought it was longer than my arm!"

Sol. Smith.

The American Sentinel, speaking of "Sol. Smith, the Lawyer, Actor, Preacher," &c., remarks—"We want a few more of such men." To which a Dayton (Ala.) paper replies—"You'll not get them. There are none others like him. He is the first and last of his genus, a *sol*itary specimen of a strange combination of character. Even in the physical way Sol. will be hard to match, for he is tall as a May-pole, and crooked as a pump-handle.

The True American says that when John C. Calhoun takes snuff, every man in South Carolina sneezes

A Profitable Hoax.

Recently at the Copper Mines on Lake Superior, a "greenhorn" asked some miners to show him where to dig; they offered to do it, provided he would treat to a quart of "*prairie dew*," which he did, and they set him to work under a shady tree, in mere sport. Before night he struck a "*Lead*," and the next day sold out for $4000.

Reforming.

"Well, how are you this morning?" said one old rowdy to another.

"Well, sir, quite well—never was better; I'm another man, sir."

"Ah! Then who pays those old accounts of yourself that was?"

"Don't remind me of my sins. I'm reformed man. I was sinful in contracting such debts, and I must now atone for my error by not paying for them."

Yankee Hill is most outrageously puffed by some of the Albany papers. It is even insinuated that he is employed in part by a combination of tailors to cause the citizens to split their coats and other garments with laughing,—for the benefit of the trade.

Isaac Hill of the N. H. Patriot, concludes that the new tariff law is not seriously affecting the manufacturing interests, because he lately saw two loads of machinery going into the country. He must be a sage.

Some scoundrel has run away with the wife, children and furniture of a Mr. Reynold, residing in Allegany county, leaving nothing but an empty house with the rent unpaid. Really too bad.

Right Side Up.

Wrong Side Up.

The appearance of many things and circumstances, like the above cut, depends on the view we take of them: and be it remembered that when a man's head is inverted, to him all appear *wrong side up*. Hence arises most of the complaints, grumbling and murmurings, about the times, the weather, the government, the people, &c. To one who possesses, or is posesssed of a malignant, peevish disposition himself, most of the conduct of others, and the times and circumstances in general, will to him appear *wrong side up*, and he will not unfrequently find his own calculations *up side down*. Could we at once, view each circumstance in all its different bearings, we should generally see some things that would paliate others, and thus render the whole at least tolerable: and most of the jarring and clashing in the world would thus be avoided. But by far the better way is to take of each and every thing [a view the most favorable This course is evidently peaceable, else politicians and sectarians could not so uniformly applaud every act of their favorite sect or party, and as uniformly oppose and deprecate those of their opponents. Every man who habituates himself to viewing things in the most favorable light, will find this course the most conducive to his own happiness, while it contributes much to that of his neighbors and associates. Look at the bright side of every thing, and hold every picture *right side up*.

Importance of Humility.

Dr. Franklin once received a very useful lesson from the excellent Dr. Cotton Mather, which he thus relates in a letter to his son:—"The last time I saw your father was in 1724. On taking my leave, he showed me a shorter way out of the house, by a narrow passage, which was crossed by a beam over head. We were still talking, and as I withdrew, he accompanying me behind, and I turning towards him, he said hastily, "Stoop, stoop!" I did not understand him till I felt my head hit against the beam. He was a man who never missed an opportunity of giving instruction; and upon this he said to me: 'You are young and have the world before you. *Learn to stoop* as you go through it, and you will miss many hard thumps.' This advice, thus beat into my head, has frequently been of use to me. And I often think of it when I see pride mortified, and misfortune brought upon people by their carrying their heads too high."

"An ambassador" is defined as a man sent abroad to lie for the good of his country. To compensate them for the wear and tear of conscience, the country allows him a larger salary than any other subordinate they employ.

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Communicated.

The Eureka: or Journal of the National Association of Inventors.

(We had not intended to say any thing on the subject of the "Eureka" in this number, nor until the second number of the work should have been issued: but finding that a great degree of dissatisfaction exists in the minds even of those who are represented in that paper to be the supporters and conductors thereof; and having received an implied request for the insertion of the following communication, we would not refuse it, although we doubt whether the Eureka will ever reach its third number, whether its contents are subjeeted to public criticism or not.)

Mr. Editor: I had a little curiosity to hear what the press said of this periodical; but as yet I have not seen any notice, except the brief one in your columns. As a general rule, it is inexpedient for an association to publish a periodical. Instead of being an expression of the society, it almost unavoidably becomes the organ of a clique, and renders the patronage of an otherwise liberal organization subservient to private interest. In the columns of the "N. York Farmer" was first advoeated the formation of the N. Y. State Agricultural Society. Among the first acts of this society was the issuing of an agricultural paper at *twenty-five cents* per annum. This was scattered over the whole country to the injury of those who had been pioneers in publishing agricultural papers. The Society could not sustain it without loss. It was sold to an individual on condition that he would publish the proceedings of the Society. The price was quadrupled. It was soon found that a periodical having a general circulation, could not devote much space to a local society, however noble and prosperous. Necessity led to the columns of the daily press, and to the issuing of a yearly volume of Transactions. This will be the result of every prosperous association. If the proceedings are worth publishing, the press will spread them over the whole face of the civilized world. A collection of the most important and well-digested papers in a yearly volume, is more in accordance with the dignity and usefulness of a national association. Besides the injustice done to other periodicals previously in existence, the association adds nothing to its reputation by the undertaking. There are three or four individuals at the American Institute who have a hankering for the control of a paper. It is very easy to see that the publishing of a weekly paper by the Institute would be a suicidal act. All the Institute has to do is to make its proceedings interesting, and the widest publicity will be given as a matter of course.

It was natural to suppose that with such an array of editors, editorial committee, and of associate professors, the "Eureka" would have done credit to the age, and claimed a rank, in point of literature, with other monthlies. But candor leads me to say, I do not recollect of having read a select journal with so many violations of correct writing. With the exception of two or three articles, the whole number abounds with school-boy violations of the English language. Redundancy and the want of appropriateness in the use of words are the most common errors. Circumlocution and want of precision are common; and in many sentences all these and other violations occur, rendering it almost impossible to guess at the meaning. Independent of "*inflexibly* in advance" on the cover, the first sentence in the announcement on the first page is an instance of ambiguity and careless construction. In the first article, on the same page, are several sentences indicating the same carelessness. The article describing Hoe's cylinder press is a collection of badly-constructed sentences. If your limits permitted I would give a whole column of illustrations. The following sentences have so many faults I cannot Italicise. They may serve to exercise your juvenile readers.

"We intend to pursue the publication of the list hereafter, future and past; that is in our next number will appear those of August 20, and follow for one month; also the list for one month prior to the 21st of June."

"A material or composition, of a very cheap character, has been invented, and hard, strong and compact as flint." "From this, streets of any grade may be formed, and in such a way as to entirely to secure a permanent and level surfaee to its proper grade and arch."

Three fourths of the sentences forming the article on Dr. Lewis' Railroad are very faulty.

"Hutching's Propeller. It consists of forming a set of oars, and by cams upon themselves, and a foundation-plate with cams to match, cause the oars to revolve of themselves, when the main wheel, composed of these oars, revolves."

"A patent is pending for the invention of a wheel, in which Mr. Wm. Hulme, of Paterson, N. J., has made an invention."

"Russ's Pavement. There is no doubt it will make a good road in comparison with our present streets, as far as surface goes; but we must confess our incredulity of the entire success of this plan. We do not like the ideal method of getting at the water-pipes, &c. of the city."

The Report on Rider's Iron Bridge is by another and different pen. I will pass by "*protracted* from beneath upwards," &c., and give a few more quotations.

"Inventors scarcely ever receive the compensation due their however distinguished merit, either pecuniary or laudatory. The originators or first conceivers of the most momentous plans of utility and comfort are oftenest the most grossly neglected and overlooked."

"Shortly after these details reached the U. States, by Professor S. F. B. Morse, of New York, who was at the time of the discovery residing in Paris."

"This committee give their services for the promotion of good to the cause of Invention and Science, without any consideration other than this."

"Almost all other branches of knowledge have their magazines and journals, and other means of diffusing information, so that in their departments hardly a desideratum is left to be supplied; while the Inventor, as such, has almost no channel through which he may legitimately appear before the public." "An editorial committee was accordingly appointed for the supervision of this department, and to whose inspection all matter of the journal, previous to publication, will be submitted."

All the previous articles have been descriptive. We now come to one argumentative, on Novelty in Inventions. The reasoning powers of the writer may be learned from the following:

"Thus we conclude that the *novelty* of *an invention* consists in making something 'useful to society,' and that in an original and novel way, so as to embody the great principle of invention." Or, as far as the writer has informed us, the novelty is the useful, the useful is the original and novel, and the original and novel are the great principle, and the great principle is the novelty or something else.

"We offer an explanation, not an apology for the want of a more full variety of scientific matter."

"Fisher's Magazine publishes a complete list, comprising the Railroads of the U. States, as far as they are completed, and as far as particulars are known."

"The French government has patronized an exploration of the island of Cyprus, for the purpose of exploring its architectural remains."

Under the head of "Editors' Table," I subjoin the principal and most important sentence:

"In this department we have but little room, and in this case it is, perhaps, well we have little, as it is seldom much in the way of articles for notice, are placed before an editorial corps before the appearance of the first number."

With the exception of three or four articles, the whole number is discreditable to The National Association of Inventors. A second number should not appear until the editors have had the benefit of at least one term in the preparatory school of Columbia College.

Sept. 15, 1846. S. F.

A heron measuring over six feet from tip to tip of his wings, and nearly four feet from beak to toe, was lately captured in Whately, Mass. His beak was six inches in length:

The print works of East Greenwich, R. I. engaged in printing mousseline-de-laines, are preparing to close business and shut up.

Worthy of Attention.—"We wonder at the foolish practice of the Chinese, in the uncomfortable form and pressure of their Shoes, while at the same time, the construction of our own is often but little better. If shoes were made in the shape of our feet so as to exert an equal pressure on every part, corns and bunions would never exist."—[N. Y. Organ, Sept. 19, 1846.

☞ The above truthful and judicious remarks, emanating from the able editors of the above valuable Journal, should strongly present itself to the minds of every person having an eye to the comforts of life. To those who have given a trial of the Superior Boots and Shoes manufactured with DICK's Patent Elastic Metallic Shanks, information would be needless; for they could not be induced to purchase elsewhere. But we would respectfuily ask attention of the entire Boot and Shoe wearing community, to call at 109 Nassau street, being assured that it gives the proprietors great pleasure to impart every information for the ease and comfort of the UNDERSTANDING, and also with regard to their entirely new mode of taking the measure of the foot, to give an equal pressure on every part. *

ADVERTISEMENTS.

☞ THIS paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies.

Advertisements are inserted in this paper at the following rates:

One square, of eight lines one insertion,	$ 0 50
" " " " two do.,	75
" " " " three do.,	1 00
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GOLD PENS!!—In consequence of the increased facility afforded by machinery for the manufacture of my GOLD PENS, I am enabled to furnish them to the Trade, at a much less price than they have heretofore obtained them through my Agent.

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102 Chambers st.
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Engraving on Wood

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These machines are perfectly simple and conveniently managed. The whole apparatus is contained in a little box 8 inches long, by 4 wide and deep. They may be easily sent to any part of the United States. To be had at the office of the Scientific Americcan, 128 Fulton st, 2nd floor, (Sun building) where they may be seen IN OPERATION, at all times of the day and evening. 2

The Ball of the Bears.

As Stanilaus Augustus, the last king of Poland, was a tool of Russia, and did not enjoy any consideration, the Polish grandees played him many tricks. Prince Radziwill came to court in a carriage drawn by six wild bears;—the horses of course, were extremely frightened; in consequence of which, some accidents happened. The king pointed out to the prince the impropriety of his conduct. Radziwill added, that the bears were not cross, as whip, gold, and patience can put in order every thing; He added also, that sometimes the ace beats the king at cards, and paid liberally the damages. After some time, he gave a splendid party, to which he invited all the ambassadors, and all the leading personages in Poland, and displayed extraordinary luxury. The dancing was kept up in several drawing rooms. After the supper, he conducted a select party to a separate apartment—where, to their astonishment, they found four girls of uncommon beauty, richly dressed, in company not with four gentlemen, but with four enormous bears!—which, after the first outbreak of music, began to dance with the girls all the figures of French quadrilles, with the utmost accuracy, and with as much ease as if they were highly educated gentlemen. At first the guests were alarmed; but, seeing the extraordinary tameness of the beasts, struck with amazement, they seemed to have been pleased with this extraordinary sight. After the dance was over, their bearships conducted themselves with the utmost propriety, and, at a sign from the keeper, each of them made a bow to his lady, and withdrew to another room. For some time, nothing was talked of at Warsaw but that singular ball.

All is not Gold that Glitters.

A lady, at a ball lately given in Calcutta, attracted the attention of all, and excited the jealousy of many, in consequence of the splendor and brilliancy which her diamonds shed upon her person and all around her. At length that curiosity which is the moving spring of woman's actions, could be no longer resisted by her female admirers, who at the close of the ball, instituted a rigid examination of the nature of those incomparable brilliants, when, to their astonishment, they found that they were no more or less than so many fire flies, which the envy of the ball-room had secured in gauze bags, and which as she moved about, fluttered, and thus threw out their varied brilliant hues.

The Odd Fellows procession to the dedication of their new Hall at Philadelphia, says our exchanges "*came off* on Thursday" We suppose the procession "came off" this way, as we saw a part of it passing through this city.

A young lady by the name of Emma D. Tower, sixteen years of age, has been missing from her parents and home in Providence, R. I., since the 11th. Her parents are distressed with anxiety to find or hear of her.

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Painting in Imitation of Rose-Wood.

(By the particular request of a "Mechanic" in Cherryfield, Me.)—In this art the process is various according to the circumstances, and the ground on subjects to which it is applied. In painting common chairs, the ground is prepared by a coat of paint composed of ivory black and rose-pink, — equal quantities, ground in a mixture of equal parts of linseed oil, drying japan and spirits of turpentine.—When this is dry, the graining color, consisting of three parts of rose-pink with one of vermillion, ground in a mixture of oil, japan and spirits of turpentine, is applied with a common flat graining brush. Fancy boxes and cabinet furniture are painted by a different process, by which a better imitation is produced. The ground is prepared by one or more coats of white lead changed two or three shades with yellow ochre. When dry, a thin staining of burnt terra-de-sienna ground in water, containing a very little sugar or gumarabic is laid on the work, and while this continues moist and flowing, the graining is applied. The graining should consist of a mixture of black and rose pink, ground in the staining compound. This must be varnished when dry, with copal varnish, Some prefer, however, to grind the staining and graining in oil, diluted with spirits of turpentine. The learner must have some sample pieces of varnished rose-wood before him when graining.

India Rubber.

The substance called India Rubber, or Caoutchouc, was not known in Europe until the beginning of the eighteenth century. It was originally brought as a great curiosity from South America. Europeans continued ignorant of its origin until a deputation of the French Academicians undertook a voyage to South America in 1735, for the purpose of obtaining the correct admeasurement of a degree of the meridian. These philosophers did not confine their attention to the one great object of their pursuit, but among other interesting discoveries made themselves acquainted with that peculiar substance—caoutchouc. These Academicians discovered at Emeralds, in Brazil, trees called by the natives *heve*, whence flowed a juice, which, when dried, proved to be what is called India Rubber. The *heve* was also found growing in Cayenne, and on the banks of the Amazon river. It has since been discovered that caoutchouc may be obtained from another species of tree growing in South America, called *jatropha elastica.* If these trees are punctured, a milky juice flows out, which, on exposure to the air, thickens into a substance of a pure white color, having neither taste nor smell. The hue of the caoutchouc of commerce is black in consequence of the method employed in drying it. The usual manner of performing this operation is to spread a thin coating of the milky juice upon the moulds made of clay, and fashioned into a variety of figures. These are then dried by exposure to the heat of a smoke-fire; another layer is then spread over the first, and dried by the same means; and thus layer after layer is put on, until the whole is of the required thickness. While yet soft it will receive and retain any impression that may be given to it on the outside. When perfectly dry the clay within is broken into small fragments by percussion, and the pieces are drawn out through the aperture which is always left for the purpose. The common bottle of India Rubber, therefore, consists of numerous layers of pure caoutchouc, alternating with as many layers of soot.

The natives of those parts of South America to which these trees are indigenous, convert the juice to a variety of purposes. They collect it chiefly in the rainy season, because, though it will exude at all times, it flows then most abundantly. Boots are made of it by the Indians, through which water cannot penetrate; and the inhabitants of Quito prepare a kind of cloth with it, which they apply to the same purposes as those for which oil-cloth or tarpaulin is used here. This, no doubt, is similar to the cloth now prepared with this substance in America, the use of which yields so many important advantages.—*Youths' Gazette.*

Communication on Atmospheric Resistance.

The following letter has been on hand several weeks, but deferred on account of a constant press of matter by which the limited space in our former small sheet was crowded. Our respected correspondent has consented to excuse the delay.

PROVIDENCE, —— 1846.

Friend Porter: In January last, I addressed a few lines to you, asking information in regard to an article entited Atmospheric Resistance, in the New York Mechanic, of December 11, 1841. In your answer, you say if the full surface is 30,000 square feet to each wing, (which makes 60,000 square feet,) only about half of one horse power would be required to sustain this weight, and I understand you, virtually to say, that they must be ten times as large, in order that the strength of one man be sufficient to work this and elevate himself together with the apparatus, if it were not too heavy. Now, this makes 600,000 square feet. This is rather more than 774 feet square: ratherlarge sized wings. One would suppose that they might lift rather heavy, if they were very light, being 387 by 774 feet each. Now, to me this is entirely incomprehensible, and I should like an explanation, if this calculation is correct, how it is that an eagle which sometimes weighs nearly thirty pounds, can elevate himself, with so much ease, and even carry with him nearly his own weight, using a pair of wings, which if they were five feet long and two feet wide each, would make but twenty feet of surface. Thus, you will see, is no where in proportion to the weight even of the eagle alone, (which we will suppose to weigh twenty pounds,) that the wings bears to the 150 pounds, while on the other hand, it is near in proportion to the surface of the wings of a pidgeon and its weight. Nor can I comprehend why it would require so much power, the eagle though he exerts himself considerable in rising, no doubt, does not seem to use power any where in the proportion that you have thought would be required supposing the wings to be made in the same proportion to the 150 pounds that his wings are to his weight, his beats are not so quick but what they can be very easily counted.

By answering, you will much oblige,

your friend,

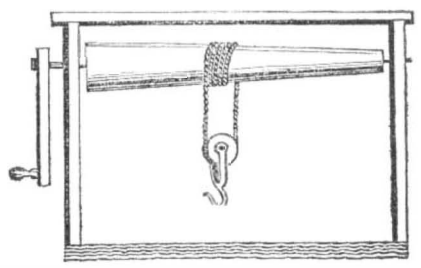
YANKEE.

In answer to the foregoing, we would remind our correspondent, that in his former communication, he proposed a limited weight of apparatus, and in our answer, it was far from our intention to allow an additional weight on account of the requisite extent of surface. With regard to the philosophy of the flight of the eagle, it must be borne in mind that atmospheric resistance is as the square of the velocity *downward:* and the only way in which the phenomenon of the flight of the eagle can be reconciled with the laws of mechanical science as established by experiment, is by supposing the velocity of the wing downward to be equal to 70 feet per second, whereby a resistance would be encountered equal to 12 pounds per square foot of surface to the wings. It is a fact, however, that kites and hawks are often seen to continue suspended in the air several minutes without any apparent motion of the wings: but by what law or theory the feat is accomplished, natural philosophy has ventured no other conjecture than that the bird is endowed with the faculty of suspending occasionally its ordinary subjection to the laws of gravity. If any observing theorist will give any more rational conjecture on the subject, we should be glad to have him examine it.

It is proposed and urged by the papers in several States, to have a thanksgiving day throughout the Union, on the 26th of November.

"As dull as a hoe," is a very common phrase, and implies that hoes are necessarily or ordinarily dull. But it is advisible for farmers to keep their hoes sharp, as they regard a saving of labor.

The Conical Windlass.



Various methods have been heretofore described, for raising heavy bodies, or producing for other puposes, a great force,—usually miscalled power—by the application of a comparatively small force: but no method is known, more unlimited in its effect, or more simple in construction; than the conical windlass. It consists of a simple horizontal windlass, with a crank at one end, as shown in the engraving. The windlass is made in a conical form, being a little larger at one end, than at the other; and if the friction of its bearings be relieved by the ordinary friction rollers, it will so far multiply the force applied, as to break a double inch-rope, by the power of one man at the crank. An endless rope, or one of which the two ends are spliced together, is passed five or six times round the small end of the windlass, and down under a single pulley below: then, as the windlass is turned by the crank, the rope is constantly given off from one part, while the circumference is greater. Now it is plain, that if the windlass is one-fifth of an inch larger in circumference, at the point at which the rope is taken up, than at the place where it is given off to the pulley, that whatever may be appended thereto, will be raised one tenth of an inch by each revolution Then, if we suppose the crank lever to be fifteen inches, the handle will travel about 100 inches, in each revolution, which gives a power, or increase of force, of 1000 to one. Therefore, if 100 pounds of power be applied to the crank handle, it will be sufficient—minus friction—to raise a weight of 100,000 lbs. The only inconvenience in this apparatus, and which prevents its coming into more general use, is, that it is too limited in the extent of its motion, in consequence of the travelling of the rope from one end of the windlass to the other. Thus, if the windlass be but twenty-five inches long, and the rope one inch in diameter, it will admit only twenty revolutions, without renewing. Yet in many cases, in which an article is required to be raised, or moved but a few inches, the conical windlass will be found preferable to any other method.

Requisite Strength of Steam Boilers.

Our correspondent S. B. cannot comprehend that the strength of iron for a cylindrical boiler should be in direct proportion to the diameter thereof, in order to sustain an equal pressure per square inch; wherefore, we must reason with him on the long scale. The cohesive strength of good iron is 64,000 lbs. per square inch; and of course, a strip of boiler-iron plate 1-8th inch thick will sustain 8000 lbs. If a boiler made of thin iron is 14 inches in diameter, or 44 inches in circumference, each inch of its length will contain 44 square inches, and either half thereof will contain 22 inches: and as the pressure on this portion is sustained by at least two inches of width of plate,—one inch on each side,—it follows that it will sustain a pressure of at least 700 lbs. per square inch, in the direction of circumference. If the diameter is double, the number of square inches will be double, and will require double the thickness to sustain equal pressure. With regard to tde pressure endwise, the area of a cylinder head 14 inches in diameter is 154 inches, and the strength of the 44 inches of circumference would be suffiient to sustain 352,000 lbs., which, divided by the area, is 2,275 lbs. per square inch. If the diameter is 56 inches, the circumference being 172, would sustain a pressure endwise of 555 lbs. per inch. Thus it will be seen that if the cylinder were even 20 feet in diameter, the iron would better sustain the pressure on the head that on the periphery. With regard to the requisite strength of the cylinder's head, if they are made in a semi-spherical convex form, they will require no more thickness of plate than the cylinder: but if they consist of plane disks, the thickness thereof should bear the same proportion to that of the periphery that the area in square inches does to three times the circumference. But in general, no other rule is observed for the thickness of the heads, than to make them extravagantly heavy, without much regard to theoretic calculation.

Bagley's Gold Pens.

Do our readers wish to hear any thing more about them? If so, they have only to inquire of any one of the many thousands of writers who have used these pens six months or more, and can hear the fact attested, that these are decidedly the cheapest pens (at $4) that can be any where found. Mr. Bagley has recently patented a neat, elegant, and excellent improvement in the pen-holder, which "takes the shine off" all precedents. Should our readers find a real good article in this paper, they may know it was written with one of Bagley's pens. Nuf ced.

The Humming Bird.

A gentleman who resided some time on one of the West India Islands informs us that while he was once travelling along the bed of a deep ravine overhung with thick vines, he was actually started by the immense numbers of humming birds which hovered over and about him. They hovered about him as if actuated by curiosity alone. They were of various kinds and colors, some of them being nearly as large as sparrows, while others were but little larger than a bee. Some were of a dingy green, or a light brown, while others seemed gaudily arrayed in plumage as brilliant and variegated as the rainbow. They would approach within arms length of his face, and pausing in their flight, with their little wings, in rapid motion, would stare at him as if they wondered what possible business he could have in those remote wilds; but they exhibited no symptoms of terror, not having been taught by experience to fear the cruelty of man.

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